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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Volker Schadler

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EXAMINER

NEGRELLI, KARA B

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/593,419	Applicant(s) SCHADLER ET AL.	
	Examiner KARA NEGRELLI	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 April 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) 1-11 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

**METHOD FOR THE PRODUCTION OF POLYMER FOAM BEADS BASED ON
REACTIVE POLYCONDENSATION RESINS**

DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Any rejections stated in the previous Office Action and not repeated below are withdrawn.
3. No new rejections have been made over previously rejected claims. For this reason it is proper to make the present action FINAL.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 12 and 14-18, and 20-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Vial (US 3,743,612).
6. Vial teaches a composition for producing solid foams, said composition of which comprises a latex emulsion (in which at least one styrene, butadiene, or beta hydroxyethyl acrylate may be used to form the latex) (column 3, lines 10-25 column 3, lines 60-65), and further comprising from 1 to 100 percent (based on the weight of the

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copolymer in the latex) of at least one coreactive resin such as amineformaldehyde condensates (column 3, lines 25-58). The coreactive resin may comprise melamine-formaldehyde condensates (column 4, lines 11-15) and may be added to the latex as an aqueous solution (column 4, lines 22-24). Further additives such as emulsifiers or aids such as potassium oleate (ionic surfactant) may be used in the preparation of the composition (column 4, lines 53-60). The combining of the latex dispersion with the coreactive material (melamine formaldehyde condensates) is a gelling procedure, and the curing of the material to produce a foam proceeds by further interaction (aging) of these materials (column 5, lines 1-3).

7. Example 1 of Vial (column 6, lines 3-23) teaches a composition comprising styrene-butadiene latex and melamine formaldehyde resin which is combined with water to form an aqueous dispersion. The composition was air dried (column 6, lines 21-22), meaning that the limitations of claim 20 are met. The process of Vial does not comprise a step in which the gel is brought into contact with organic liquid to replace the water present in the gel by this liquid (pertaining to instant claim 1).

8. Vial does not expressly teach that the foamed products has a porosity of at least 70% by volume or a pore diameter of not more than 1 micron. However, since nearly identical products are used in an identical process as taught in instant claim 1, one of ordinary skill in the art would reasonably expect the foam of Vial to have the same properties as the foam of the instant invention. Case law holds that a material and its properties are inseparable. *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 19 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vial (US 3,743,612).

11. Vial teaches the composition as applied to claim 12 above in which the melamine formaldehyde condensate coreactive material may be present in an amount of from 1 to 100 percent based on the weight of the copolymer in the latex (column 3, lines 24-27). This range overlaps the ratio of 10:1 to 1:10 of instant claim 19 and the range of 5:1 to 1:5 of instant claim 23.

12. It is well settled that where the prior art describes the components of a claimed compound or compositions in concentrations within or overlapping the claimed concentrations a prima facie case of obviousness is established. See *In re Harris*, 409 F.3d 1339, 1343, 74 USPQ2d 1951, 1953 (Fed. Cir 2005); *In re Peterson*, 315 F.3d 1325, 1329, 65 USPQ 2d 1379, 1382 (Fed. Cir. 1997); *In re Woodruff*, 919 F.2d 1575, 1578 16 USPQ2d 1934, 1936-37 (CCPA 1990); *In re Malagari*, 499 F.2d 1297, 1303, 182 USPQ 549, 553 (CCPA 1974).

13. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Vial (US 3,743,612) and further in view of Reck et al. (US 6,569,970).

14. Vial teaches the composition as applied to claim 12 above but does not expressly teach the size of the polymer particles to be used to produce the latex dispersion.

However, Reck et al. teach aqueous polymer dispersions comprising styrene or esters of acrylic and methacrylic acids (column 4, lines 8 and 16-23) in which the polymer particles have an average diameter of from 150 to 250 nm (column 8, lines 47-51).

15. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use polymer dispersions which have the particle diameter disclosed by Reck et al. in the composition disclosed by Vial because Vial does not teach a specific particle size. One of ordinary skill in the art would look to similar aqueous dispersions to determine workable sizes. It would have been obvious that a small particle diameter, such as the particle diameter disclosed in Reck et al., ensures a more uniform distribution of particles within the dispersion.

Response to Arguments

16. Applicant's arguments filed April 9, 2010 have been fully considered but they are not persuasive.

17. Applicant argues a major difference of Vial is that after combining the components in step 3) a gel must be formed-exactly so that the formed gel is dried. Applicant argues that Vial differs from the instant application in the following ways: 1)

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applicant asserts that Vial does not disclose a gel before drying; 2) Vial prepares latex vulcanizates while the instant invention prepares polymer foams based on polycondensation resins; 3) the polymer foams of the instant invention have a number average pore diameter of not more than 1 micron while Vial discloses neither pores nor their diameter; and 4) the instant invention does not claim to use a catalyst for making the instant polymer foams while Vial mandatory claims to use a tetramine zinc (II) salt catalyst for making the latex vulcanizates or related foams.

18. Applicants' arguments are not persuasive. First, it is noted that Vial does, in fact, teaching formation of a gel. The combining of the latex dispersion with the coreactive material (melamine formaldehyde condensates) is, by nature, a ***gelling*** procedure, meaning a gel would indeed be produced. Second, it is noted that the instant claims utilize the transitional phrase "comprising." The transitional term "comprising" is inclusive or open-ended and does not exclude additional, unrecited elements or method steps. See, e.g., *Mars Inc. v. H.J. Heinz Co.*, 377 F.3d 1369, 1376, 71 USPQ2d 1837, 1843 (Fed. Cir. 2004). See also, *Invitrogen Corp. v. Biocrest Mfg., L.P.*, 327 F.3d 1364, 1368, 66 USPQ2d 1631, 1634 (Fed. Cir. 2003) which teaches that "The transition comprising' in a method claim indicates that the claim is open-ended and allows for additional steps." See MPEP 2111.03 [R-3]. Because of this open-ended language, the addition of a catalyst component and/or the addition of a frothing step *after* formation of the gel does not render the claims unanticipated over Vial. As discussed in the rejection above, Vial teaches a composition for producing solid foams, said composition of which comprises a latex emulsion (in which at least one styrene, butadiene, or beta

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hydroxyethyl acrylate may be used to form the latex) (column 3, lines 10-25 column 3, lines 60-65), and further comprising from 1 to 100 percent (based on the weight of the copolymer in the latex) of at least one coreactive resin such as amineformaldehyde condensates (column 3, lines 25-58). The coreactive resin may comprise melamine-formaldehyde condensates (column 4, lines 11-15) and may be added to the latex as an aqueous solution (column 4, lines 22-24). Further additives such as emulsifiers or aids such as potassium oleate (ionic surfactant) may be used in the preparation of the composition (column 4, lines 53-60). The combining of the latex dispersion with the coreactive material (melamine formaldehyde condensates) is a gelling procedure, and the curing of the material to produce a foam proceeds by further interaction (aging) of these materials (column 5, lines 1-3).

19. Furthermore, while Vial prepares latex vulcanizates, Vial also teaches the incorporation of a condensation resin, melamine-formaldehyde condensates, as is required in the instant application. Example 1 of Vial (column 6, lines 3-23) teaches a composition comprising styrene-butadiene latex and melamine formaldehyde resin which is combined with water to form an aqueous dispersion. The composition was air dried (column 6, lines 21-22). Therefore, in the process disclosed in Vial, a gel is formed using a gelable mixture comprising a condensation resin in a solvent, an aqueous dispersion comprising polymer particles is prepared (latex), the two components are mixed in a **gelling** reaction with water, forming a water-containing gel, and finally the gel is dried in air, all of which are the required steps of instant claim 12. Additionally, the process of Vial does not comprise a step in which the gel is brought into contact with

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organic liquid to replace the water present in the gel by this liquid (pertaining to instant claim 1).

20. Because Vial discloses nearly identical products used in an identical process as taught in instant claim 1, one of ordinary skill in the art would reasonably expect the foam of Vial to have the same properties as the foam of the instant invention (including both the pore diameter and porosity). Case law holds that a material and its properties are inseparable. *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

1. As to the applicants' argument that the gist of Vial is to provide an alkaline catalyst (tetraamine zinc (II) salt (cf the claims) for the curing of a reactive latex with a coreactive resin while the gist of the instant application is to make nanoporous foams based on reactive polycondensation resins by using no catalysts, it is noted that the features upon which applicant relies (i.e., a catalyst free reaction used to produce the foams of the instant invention) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

21. Furthermore, "Arguments that the alleged anticipatory prior art is 'nonanalogous art or teaches away from the invention' or is not recognized as solving the problem solved by the claimed invention, [are] not germane' to a rejection under section 102." See *Twin Disc, Inc. v. United States*, 231 USPQ 417, 424 (Cl. Ct. 1986) (quoting *In re Self*, 671 F.2d 1344, 213 USPQ 1, 7 (CCPA 1982)). For the reasons provided above,

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Vial anticipates the claimed process. Vial teaches every element and every step required by instant claim 12. Instant Claim 12 uses the transitional language "comprising" meaning additional steps or elements may be included in the claimed process. Therefore, claim 12 is anticipated by Vial, and applicants' arguments that claim 12 and claims dependent on claim 12 are unobvious are not persuasive.

Conclusion

22. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

23. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KARA NEGRELLI whose telephone number is

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(571)270-7338. The examiner can normally be reached on Monday through Friday 9:30 am EST to 6:00 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on (571)272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/KARA NEGRELLI/
Examiner, Art Unit 1796

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